



PATENTS

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Ted Christopher Examiner: F. Jaworski
Serial No.: 08/746,360 Art Unit: 3305
Filed: November 8, 1996 Docket: 9872
For: FINITE AMPLITUDE DISTORTION- Dated: March 20, 1998
 BASED INHOMOGENEOUS PULSE
 ECHO ULTRASONIC IMAGING
Assistant Commissioner for Patents
Washington, DC 20231

#14 D.
4-21

LETTER

Sir:

Applicant wishes to bring to the attention of the Examiner that applicant's representative has recently had the opportunity to view a limited segment of two video tapes (without audio) which were reportedly presented publicly at a time prior to the filing of the present application. Neither applicant nor applicant's attorney is in possession of either video tape.

The video presentation appears to be directed to an ultrasound system used to present the cardiac anatomy of a dog. The tapes purport to show (in the absence of any accompanying sound) a baseline image generated by an ultrasound system prior to the injection of contrast agents into (the blood stream of) the subject cardiac system viewed. In the baseline mode (as well as in the contrast mode) shown in one tape, a reference to

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Dated: March 20, 1998

Frank S. DiGiglio
Frank S. DiGiglio

"second harmonic" appears in the frame as the contrast agent appears to be injected into the subject, causing enhancement of the cardiac image.

It is understood that the contrast agents utilized in these videos generate an enhanced amplitude return echo at a frequency other than the principle frequency, in order to be distinguished from the echo signal generated from the tissue itself. Accordingly, the reference to the "harmonic" mode or "second harmonic" was apparently used in anticipation of receiving and displaying an echo from the contrast agents and not the native tissue. Any baseline "image" which was presented in the video was the result of the reflection of the principle frequency and a number of harmonics including the first, second, third and n^{th} harmonics, as component parts. As presented by the video, only undifferentiated harmonics are provided in the baseline mode, which frequencies derive from the reflection of a series of sine waves used to generate the principle frequency transducer pulse in the first instance. It is apparent that no effort was indicated in either of these tapes to take advantage of the harmonic principle generated by the tissue (to the exclusion of contrast agents) underlying the present invention.

Respectfully submitted,



Frank S. DiGiglio
Registration No. 31,346

SCULLY, SCOTT, MURPHY & PRESSER
400 Garden City Plaza
Garden City, New York 11530
(516) 742-4343

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TRANSMITTAL LETTER
(General - Patent Pending)

Docket No.
9872

In Re Application Of: Ted Christopher

MAR 27 1998

Serial No.
08/746,360

Filing Date
November 8, 1996

Examiner
F. Jaworski

Group Art Unit
3305

Title: **FINITE AMPLITUDE DISTORTION-BASED INHOMOGENEOUS PULSE ECHO ULTRASONIC IMAGING**

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GROUP 3300

TO THE ASSISTANT COMMISSIONER FOR PATENTS:

Transmitted herewith is:

Letter

in the above identified application.

- ☒ No additional fee is required.
- ☐ A check in the amount of _____ is attached.
- ☒ The Assistant Commissioner is hereby authorized to charge and credit Deposit Account No. 19-3886 as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of _____
- ☐ Credit any overpayment.
- ☒ Charge any additional fee required.


Signature

Dated: March 20, 1998

Frank S. DiGiglio; Reg. No. 31,346

SCULLY, SCOTT, MURPHY & PRESSER
400 Garden City Plaza
Garden City, New York 11530
(516) 742-4343

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Signature of Person Mailing Correspondence

Frank S. DiGiglio

Typed or Printed Name of Person Mailing Correspondence

CC: